

VIEW9 User's Guide

R.C. Fernow
Brookhaven National Laboratory
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VIEW9 is a Windows based postprocessor for the simulation code ICOOL. The program follows the evolution of a pair of selected variables through the various regions of an ICOOL simulation. The input data comes from the FOR009.DAT file produced by ICOOL.

1. Control dialog window

The program begins by displaying the control screen shown in Fig. 1.

The screenshot shows the 'VIEW9 control panel' window. At the top, it says 'Welcome to VIEW9 v 1.03' and has an 'OK' button. Below this, there is a text field for 'Input file name' containing 'for009.dat'. A checkbox labeled 'Use saved VIEW9 parameters' is followed by an empty text field. The main section is divided into two columns for 'x axis' and 'y axis'. Each column has a list box containing 'Bx', 'By', 'Bz', 'ct', 'dct', 'dpz', 'Ex', 'Ey', and 'Ez'. Below the list boxes, it says 'Selection = X' and 'Selection = Y'. To the right of these are four text fields for 'xmin', 'xmax', 'ymin', and 'ymax', all containing '1.000000'. At the bottom, there is a 'Time delay per plane [s]' field with '4.00000', a 'Plot character' field with a '+' sign, a 'Maximum N / region' field with '500', and two checkboxes: 'Plot muons only' (checked) and 'Set cuts' (unchecked). A 'Selection = .' label is also present.

VIEW9 control panel

Welcome to VIEW9 v 1.03

OK

Input file name: for009.dat

☐ Use saved VIEW9 parameters

x axis: Bx, By, Bz, ct, dct, dpz, Ex, Ey, Ez
Selection = X

y axis: Bx, By, Bz, ct, dct, dpz, Ex, Ey, Ez
Selection = Y

xmin: -1.000000
xmax: 1.000000
ymin: -1.000000
ymax: 1.000000

Time delay per plane [s]: 4.00000
Plot character: +
Maximum N / region: 500
Selection = .
☒ Plot muons only
☐ Set cuts

The user first selects variables for the x and y axes from the listed variables. The current or default selections are listed under the boxes. In the four boxes on the right the user specifies the x and y axis limits for the plot. In the edit boxes on the left at the bottom the user sets (1) the minimum display time for the plot at each region; and (2) the maximum number of particles to use at each region. The two check boxes on the right select (1) if only muons are to be used in the plots and (2) if it is desired to make cuts on some variables. Finally there is a selection box to choose the plot symbol. At the top there is an edit box that can be used for selecting the input ICOOL data file, if it is not the default FOR009.DAT in the current directory. There is also a check box and an edit box for using a previously saved file of VIEW9 parameters.

2. Cuts dialog window

If the user checks the Cuts box on the controls dialog window, a second window is displayed for selecting cuts on the variables, as shown in Fig. 2.

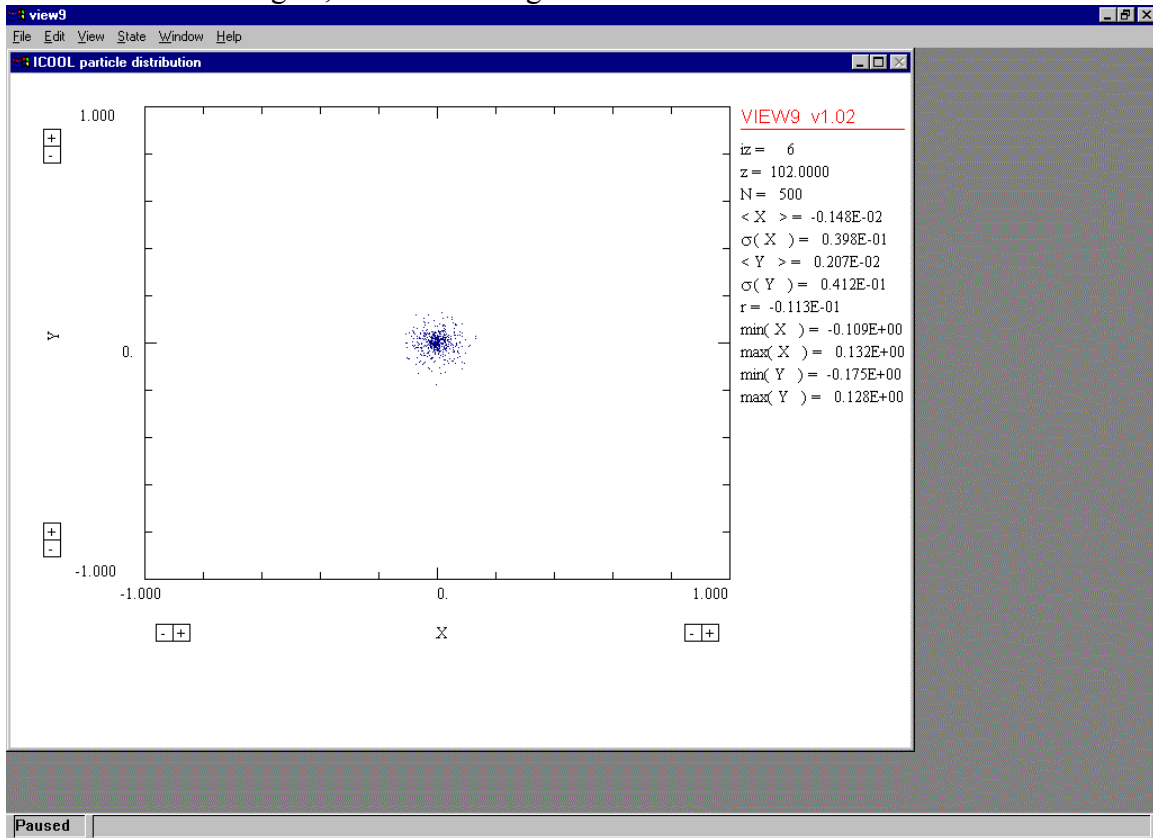
Enable	Variable	Lower limit	Upper limit
<input type="checkbox"/>	Bx	0.100000	0.300000
<input type="checkbox"/>	Bx	0.000000	0.200000
<input type="checkbox"/>	Bx	0.000000	1.500000

Allowed units: m, s, GeV, T, V/m

The user can enable up to three cuts on the plotted variables by checking the boxes on the left. The user can use one of the three default variables or choose another from the list of allowed variables. The accepted range must be entered in the lower and upper limit boxes.

3. Displaying results

After exiting the Controls dialog (or the Cuts dialog if it was selected) the display of the selected variables begins, as shown in Fig. 3.



The currently displayed ICOOL region and its corresponding z location are given at the top of the information block on the right. This is followed by the number particles selected for this region. This can differ from the number of particles in the plot, depending on the selected limits for the plot. The mean and standard deviations for the chosen variables for all the selected particles are listed next. The quantity r is the linear correlation coefficient for the two variables in the plot. Finally, the upper and lower limits for the chosen variables for all the selected particles are given on the last four lines.

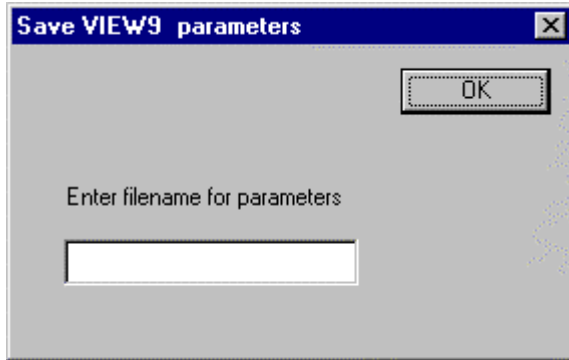
The four boxes on the plot near the ends of the x and y axes can be used to dynamically change the axis limits. Moving the mouse cursor back and forth across the box changes the limit value. The display has a status bar at the bottom ("Running" in Fig. 3) and Menus at the top.

4. Menu selections

Explanations for standard Windows menu selections can be found in the Help menu. VIEW9 has three custom menu selections.

FILE – Save control parameters

This brings up the following window. The user can type in a file name to save the current selections from the Control and Cuts dialog windows.



STATE – Update controls

This brings the Controls dialog window back up. The user can change variables, limits, etc. Note that the simulation does not stop. The new selections may not take full effect until after the current region is finished processing.

STATE – Update cuts

This brings the Cuts dialog window back up. The user can change variables, limits, etc. Note that the simulation does not stop. The new selections may not take full effect until after the current region is finished processing.

5. Using a saved parameter file

The user can start the program with preselected Control and Cut parameters by specifying the name of a saved parameter file on the Control window

The following lists the contents of a typical sample parameter file.

```
dct dpz
-0.1000E+02 0.3000E+02
-0.2000E+00 0.2000E+00
  5.00
 1000
  T  T
for009.dat
.
  F  T  F
p  r  dct
0.1000E+00 0.0000E+00 0.0000E+00
0.3000E+00 0.2000E+00 0.1500E+01
```

It is easiest to prepare this file by choosing the save option while running the program, although it is just an ASCII file.